

ZAVODOVSKIY, V.M.; STEPANOV, D.L.

New stage of the Permian in the northeastern part of the U.S.S.R.  
Sov.geol. 4 no.6:71-78 Je '61. (MIRA 14:6)

1. Leningradskiy gosudarstvennyy universitet i Severo-Vostochnoye  
geologicheskoye upravleniye.  
(Geology, Stratigraphic)

MAKAROVA, T.V., red.; STEPANOV, D.L., doktor geol.-miner. nauk, red.;  
BOGACHEVA, N.G., ved. red.; POLOSINA, A.S., tekhn. red.

[Stratigraphic schemes of Palaeozoic sediments; transactions]  
Stratigraficheskie skhemy paleozoiskikh otlozhenii; trudy.  
Permskaya sistema. Pod red. T.V.Makarovoi i D.L.Stepanova. Mo-  
skva, Gostoptekhizdat, 1962. 242 p. (MIRA 15:6)

1. Sovesnchaniye po utochneniyu unifitsirovannykh stratigrafiche-  
skikh skhem paleozoya Volgo-Ural'skoy neftegazonosnoy provintsii,  
Moscow, 1960. 2. Leningradskiy gosudarstvennyy universitet (for  
Stepanov). 3. Vsesoyuznyy nauchno-issledovatel'skiy geologo-  
razvedochnyy neftyanoy institut (for Makarova).  
(Volga-Ural region--Geology, Stratigraphic)

OBUT, A.M., red.; ZANINA, I.Ye., red.; MODZALEVSKAYA, Ye.A., red.;  
OVECHKIN, N.K., red.; RENGARTEN, V.P., red.; STEPANOV, D.L.,  
red.; SUBBOTINA, N.N., red.; OBUT, A.M., red.; VLASOVA, L.V.,  
red. izd-va; GOROKHOVA, T.A., red. izd-va; IVANOVA, A.G.,  
tekh. red.

[Importance of biosphere in geological processes. Problems of  
interrelation of paleontology and tectonics; transactions]  
Znachenie biosfery v geologicheskikh protsessakh. Voprosy  
vzaimosvazi paleontologii i tektoniki; trudy V i VI sessii  
Vsesoiuznogo paleontologicheskogo obshchestva. Moskva, Gos-  
geoltekhizdat, 1962. 247 p. (MIRA 15:9)

1. Vsesoyuznoye paleontologicheskoye obshchestvo.

(Paleontology) (Geology, Structural)

VERZILIN, Nikita Nikolayevich; D'YAKONOVA-SAVEL'YEVA, Ye.N., red.;  
VASIL'YEV, L.L., red.; IVANOV, A.V., red.; KOLOSOV, N.G., red.;  
MAKAROV, P.O., red.; POLKANOV, A.A., red. [deceased]; POLYANSKIY,  
YU.I., red.; STEPANOV, D.L., red.; SHVETSOVA, E.M., red.;  
YASHCHURZHINSKAYA, A.B., tekhn. red.

[Cretaceous sediments in the northern part of the Fergana Valley  
and their oil potential] Melovye otlozheniia severa Ferganskoi  
vpadiny i ikh neftenosnost'. Leningrad, Gostoptekhnizdat,  
1963. 219 p. (Leningradskoe obshchestvo estestvoispytatelei.  
Trudy, vol. 70, no.2). (MIRA 16:12)

STEPANOV, D.L.

Two new textbooks of paleontology. Paleot. zhur. no.3:128-  
131 '63. (MIRA 16:10)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geolo-  
gorazvedochnyy institut.

STEPANOV, D.L.

Ninth session of the All-Union Paleontological Society. Sov.geol.  
6 no.8:128-132 Ag '63. (MIRA 16:9)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologerazvedoch-  
nyy institut. (Paleontological societies)

STEPANOV, D.L., prof., red.; ZANINA, I.Ye., red.; MODZALEVSKAYA,  
Ye.A., red.; GVECHKIN, N.K., red.[deceased]; RENGARTEN,  
V.F., red.; LUBBOTINA, N.N., red.

[Problems of the characteristics and forms of the develop-  
ment of the organic world; transactions] Voprosy zakono-  
mernosti i form razvitiia organicheskogo mira; trudy. Mo-  
skva, Nedra, 1964. 209 p. (MIRA 17:9)

1. Vsesoyuznoye paleontologicheskoye obshchestvo. 7th ses-  
siya.

BARKHATOVA, V.P.; STEPANOV, D.L.

Results of the work of the Fifth International Congress  
on Stratigraphy and Geology of the Carboniferous. (MIRA 17:5)  
Sov. geol. 7 no.4:147-153 Ap'64.

MAKR DIN, Vladimir Petrovich; ORLOV, Yu.A., akademik, retsenzent;  
SHIMANSKIY, V.N., prof., retsenzent; KAMYSHEVA-YELPAT'YEVSKAYA,  
V.G., prof., retsenzent; GEKKER, R.F., prof., retsenzent;  
STEPANOV, D.L., prof., retsenzent; STERLIN, B.P., ctv. red.

[Jurassic brachiopods of the Russian Platform and some  
regions adjacent to it] Brakhiopody iurskikh otlozhenii rus-  
skoi platformy i nekotorykh prilozhashchikh k nei oblastei.  
Moskva, Nedra, 1964. 304 p. (MIRA 18:2)

STEPANOV, D.L., red.; BOBKOVA, N.N., red.; VERESHCHAGEN, V.N., red.; KRYMGOL'TS, G.Ya., red.; MIKLUKHO-MAKLAY, A.D., red.; TSAGARELI, A.L., red.; STEPANOV, D.L., red.

[Stratigraphy of the Upper Paleozoic and Mesozoic of the southern biogeographical provinces] Stratigrafiia verkhnego paleozoia i mezozoia iuzhnykh biogeograficheskikh provintsi. Moskva, Nedra, 1964. 223 p. (Mezhdunarodnyi geologicheskii kongress, 22 sessiia. Doklady sovetskikh geologov, problema 16a) (MIRA 18:1)

1. Natsional'nyi komitet geologov Sovetskogo Soyuza.

L 45647-65

ACCESSION NR: AP5010690

was observed. In these experiments, the multibeam emission modes were stable in relation to the changes in resonator dimensions. Pulsations of adjacent modes of roughly the same frequency in a straight beam were compared with pulsations of corresponding modes in "angular" emission. The frequency and amplitude fluctuations of these pulsations did not correlate. Furthermore, the overlapping of one beam (inside the resonator) had no effect on the pulsation signal frequency, the transverse intensity distribution, or the power output of the other. [JR]  
Orig. art. has: 2 figures.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri  
universitate (Scientific Research Institute of Radio

NO REF DIV: 000

Card 2/2 mb

BLINOV, O.S., inzh., SUKACH, G.Ye., inzh., ~~STEPANOV, D.P., inzh.~~, YAKIMOV, I.D., inzh.;  
IVANOV, A.S., red., SEMENOV, S.M., red.; OSOKINA, A.M., red. izd-va, :  
BACHURINA, A.M., tekhn. red.

[Standard technical specifications for building logging roads] Tipovye  
tekhnologicheskie pravila proizvodstva rabot po stroitel'stva  
lesovoznykh dorog. Moskva, Goslesbunizdat. Vol. 2 and 3. [Automobile  
roads] Avtomobil'nye dorogi. Pt. 3. [Engineering structures] Stroitel'stvo  
iskusstvennykh sooruzhenii. 1957. 46.p. (MIRA 11:10)

1. Moscow. Gosudarstvennyy institut po proyektirovaniyu lesnogo  
transporta.

(Bridges, Wooden)



STEPANOV, D. S.

Electrical Engineering

Dissertation: "Methods of Selecting the Dimensions and Placing Points of the Sources of Reactive Power in Distributing Circuits of Electrical Systems." Cand Tech Sci, Power Engineering Inst imeni G. M. Krzhizhanovskiy, Acad Sci USSR, 18 Mar 54. (Vechernyaya Moskva Moscow, 8 Mar 54)

SO: SUM 213, 20 Sep 1954

8(5)

AUTHOR:

Stepanov, D. S., Candidate of Technical Sciences (Moscow) SOV/109-58-11-2/28

TITLE:

Economic Estimation of Energy Losses by Comparing Different ~~Proposed Variations of Planned Power In-~~stallations (Ekonomicheskaya otsenka poter' energii pri sopostavlenii proyektnykh variantov energeticheskikh ob"yektov)

PERIODICAL:

Elektrichestvo, 1958, Nr 11, pp 7 - 11 (USSR)

ABSTRACT:

In an economy governed by socialist principles no well founded method is available for comparing non-recurring capital investment with running costs. Hence a double method of calculating must necessarily be adopted: One according to capital investment, and the other according to running costs. The expenditures, the non-recurring as well as running costs can conveniently be expressed as a sum of two terms, one term referring to power generation (subscript "W")

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and the second referring only to the moment of maximum load (subscript "N"). Thus are the non-recurrent capital investment  $K = K_W + K_N$ , whereas the running costs of operation  $L = L_W + L_N$ . The

estimation of the losses is related to 1 kWh of energy loss. The energy losses are characterized by a certain loss time  $\tau$  and by the coefficient of contribution to the annual load maximum of the power supply system,  $\gamma_N$ . This is an investigation of a power

system developing from fuel power stations. Firstly the fundamental serving in an estimation of the influence of losses upon capital investment are studied. In this connection it is stated that in order to make provisions for the losses capital investments for the construction of power stations, and investments in the fuel extracting industry and in transportation are required. Formula (5) for the estimation of losses with respect to capital investment is derived. The

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author deals next with the estimation of the losses with respect to running costs. It is shown that such losses can only be estimated on the basis of the average prime cost of electric power. With sufficient accuracy it can be adopted that the fuel consumption of every power station and hence also its costs are proportional to the power supplied from the buses of the power station. Other expenditures are not related to power generation and may be assumed to be proportional to the installed power **capacity** of the station. Formula (6) specifying the prime cost per 1 kWh of **produced** power is derived. The investigation of the energy losses was carried out under the assumption that the units of the system are located immediately adjacent to the bus bars of the station. If this is not the case, formulae (8) and (9) apply. The application of these formulae to power systems consisting mainly of hydroelectric power stations may lead to considerable errors in the

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estimation of losses. Expenditures in the construction of such systems vary considerably from those incurring in fuel power stations. A consideration of the expenditures for a ~~hydro~~ station in the estimation of losses will necessarily be of an approximative nature. There are 3 Soviet references.

SUBMITTED: December 16, 1957

Card 4/4

STEPANOV, D.S., kand. tekhn. nauk.

Comparison of the economic aspects of power transmission and fuel  
transportation. Elek. sta. 29 no.2:12-17 P '58. (MIRA 11:3)  
(Electric power) (Fuel)

SOV/105-59-8-3/28

8(5)

AUTHOR:

Stepanov, D. S., Candidate of Technical Sciences (Moscow)

TITLE:

A Determination of the Economic Efficiency of Connecting New Load Areas to Large Power Systems

PERIODICAL:

Elektrichestvo, 1959, Nr 8, pp 14 - 21 (USSR)

ABSTRACT:

In connection with the electrification of all sovkhoses, kolkhozes, repair service stations and worker's housing areas, to be completed from 1959 to 1965, there arises the problem as to whether it would be more economical to distribute power from small and medium local power plants or from large central power plants. This problem is investigated by the customary comparison of non-recurrent and current expenses in terms of the period of redemption period. The variant requiring higher capital investment will be more economical, if

$$\frac{K_2 - K_1}{A_1 - A_2} < t_0 \dots (1). K_1 \text{ and } K_2 \text{ denote the capital investment of}$$

the first and second variant,  $K_2 > K_1$ .  $A_1$  and  $A_2$  similarly de-

note the current expenses of the first and second variant,

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$\Lambda_2 < \Lambda_1 \cdot t_0$  the maximum admissible period of redemption period for additional capital investments. Formula (1) is rewritten as

$$\Lambda_2 + \frac{K_2}{t_0} < \Lambda_1 + \frac{K_1}{t_0} \quad (2).$$

The terms  $\Lambda + \frac{K}{t_0}$  are designated by corresponding subscripts and termed calculation expenditure, which are compared both for the local-supply variant and the central-supply variant. The latter proves to be more economical if the condition (3):  $V_S + V_L + V_{h/Un} < V_{Lo}$  is satisfied.

$V_S$  and  $V_{Lo}$  denote the calculation expenditure required for an increase of the power generated by a central system and a local system, respectively,  $V_L$  denotes the calculation expenditure for a transmission line,  $V_{h/Un}$  the same ratio for a transformer substation and the cubicle in the supplying substation. If either part of formula (3) is divided by the energy demand of the respective area, formula (4) is obtained:

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$$\Delta_{Lo}^{(E)} - \Delta_S^{(E)} > \frac{V_h/Un + V_L}{E_G}, \text{ where } \Delta_{Lo}^{(E)} \text{ and } \Delta_S^{(E)} \text{ are the}$$

calculation expenditures for the generation of the power required by the area, per kwh, in local or large central power plants, respectively. The total capital costs of tending the central power supply system to the new area are equal to the sum of the costs to be specified by formulas (12), (15), and (17), whereas the total current expenses originating from the extension of supply to the new area, are given by the sum of the costs specified by formulas (13), (16), and (18). Formulas for the

$\Delta_S^{(E)}$ , the capital investments for transmission line construction and of transmission costs are derived. From formula (28) which proceeds from (4) through (27) the line length can be determined which guarantees the connection of the load area to be economical. Calculations have been carried out to determine the limits of this length  $L_{elec.lim.}$  and diagrams

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showing the results are presented. The curves in figures 1 to 4 provide a means of determining the economical usefulness of connecting new load areas to a power supply system. An example demonstrates the expediency of connecting a number of areas to a power system. Emphasis is put upon the fact that it is not permissible to determine the expediency of such measures from investigating the above areas as a whole and that a separate consideration of each individual area is always required. There are 5 figures, 2 tables, and 2 Soviet references.

SUBMITTED: February 28, 1959

Card 4/4

STEPANOV, D.S., kand.tekhn.nauk

Economic aspects of thermal electric power plants fired with  
gas. Elek.sta. 31 no.1:16-19 Ja '60. (MIRA 13:5)  
(Electric power plants--Costs)

STEPANOV, D.S., kand.tekhn.nauk

Determining the beginning of the obsolescence stage of thermal  
electric power plants. Teploenergetika 8 no.12:21-26 D '61.  
(MIRA 14:12)

1. Tsentral'nyy nauchno-issledovatel'skiy ekonomicheskii institut  
Gosplana RSFSR.  
(Electric power plants) (Depreciation)

STEPANOV, D.S. → kand.tekhn.nauk (Moskva)

Concerning the methodology for determining the economic efficiency  
of hydroelectric power stations. Elektrichestvo no.9:74-78 S  
'61. (MIRA 14:9)

(Hydroelectric power stations)

STEPANOV, D.S., kand.tekhn.nauk (Moskva)

Appraising of the costs of electric power in designing the  
electrical sections of industrial enterprises. *Elektrichestvo*  
no.10:6-11 0 '61. (MIRA 14:10)  
(Electric power—Costs)

STEPANOV, D.S., kand.tekhn.nauk

Concerning the efficiency limits in increasing the established power  
of hydroelectric power stations. Elek.sta. 32 no.6:32-38 Je '61.  
(MIRA 14:8)

(Hydroelectric power stations)

STEPANOV, D.S., kand. tekhn. nauk

Methods for determining the economic efficiency of hydroelectric  
power stations. Elektrichestvo no.6:83-86 Je '63. (MIRA 16:7)

(Hydroelectric power stations)

STEPANOV, D.S., kand.tekhn.nauk

Reply to V.V. Bolotov's article. Elek. sta. 34 no.6:86-87 Je '63.

(MIRA 16:9)

(Electric power plants)  
(Bolotov, V.V.)

STEPANOV, D.S., kand. tekhn. nauk

Dependence of rated unit cost indices of condensing power  
plants on construction completion time. Teploenergetika 11  
no.5:21-26 My'64. (MIRA 17:5)

1. Institut goryuchikh iskopayemykh AN SSSR.

STEPANOV, D. V., Cand Agr Sci -- (diss) "Brown Carpathian and brown  
Latvian cattle in the Gissarskaya Valley of Tadzhikistan." Gor'kiy,  
1960. 21 pp; (Ministry of Agriculture RSFSR, Gor'kiy Agricultural  
Inst); 150 copies; price not given; (KL, 52-60, 122)



PROCESS AND PROPERTIES INDEX

CA

**Electroplating wires and strips at high current densities. A preliminary communication.** D. V. STARANOV, B. N. KABANOV AND N. T. KUDRYAVTSEV. *Zhurnal Met.* 1930, 1151-8.— Cold Zn plating has many advantages over the hot dip process, such as greater uniformity of the coating, steadiness of the bath, economy of Zn and easier control of the bath. The proposed methods of increasing the c. d. to hasten the process have serious drawbacks. The authors made about 300 expts. to find conditions essential for good results with high c. ds. Circulation of the bath permits higher c. ds. (200 to 400 amp./sq. dm.) than those used before. Different concns. of ZnSO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub>, H<sub>3</sub>BO<sub>3</sub>, making up the bath were also studied, as well as the changes in the bath during the process and the suitable indicators. At 80 amp./sq. dm. it is necessary to add to a bath of 1000 l. 30 l. water, 1 kg. H<sub>2</sub>SO<sub>4</sub> and 10 g. boric acid per hr. At 50 amp./sq. dm. the best temp. is 45°. At higher c. ds. the temp. should be higher. The problem of cooling the electrolyte which is heated by the current is solved by the application of air stirring; a formula is developed by which the equilibrium temp. suitable for the process can be calcd. Tables show the change of voltage with temp. and with the distance between the electrodes and a set of optimum conditions at c. ds. 50, 100 and 200 amp./sq. dm.

J. G. TOLPIN

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

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97	98	99	100

W

9

The electrochemical production of oxide films on aluminum. I. Electrolysis in sulfuric acid solutions. D. V. Stepanov, T. G. Lyapunzova, D. L. Kamkin, D. L. Berdichevskaya, G. A. Shechepetil'nikov. *J. Phys. Chem. (U. S. S. R.)* 4, 395-405(1933).—The peculiarities in behavior of Al electrodes were studied in H<sub>2</sub>SO<sub>4</sub> solns. in relation to various elec. and chem. factors with the object of obtaining oxide layers of good insulating properties. Both d. c. and a. c. were tried. The curves for increase in the overvoltage in the baths during the process of formation of oxide films were obtained. The relationship of the gap overvoltage of films to the concn. of electrolyte, c. d., etc., was detd. Films obtained had a gap overvoltage of 600 v. on formation by a. c. and of 800 v. on formation by d. c. Qualitatively it was shown that films produced by a. c. had a large elasticity. Addn. to the electrolyte of Al(NO<sub>3</sub>)<sub>3</sub> had no influence on gap overvoltage and elasticity but reduced the c. d. permissible and raised the overvoltage. G. Farman

CP

Electrodeposition of copper. D. V. Stepanov, I. P. Lyashchenko and M. S. Matveeva. Russ. 12,392, March 31, 1935. The Cu deposit is improved by electrolysis at a high c. d. in a bath contg. one mol. of anthracene sulfonic acid per 400 g. CuSO<sub>4</sub>.

ASB 51A METALLURGICAL LITERATURE CLASSIFICATION

Galvanizing metals. V. D. Romanov and D. V. Stepanov. Russ. 43,525, June 30, 1945. The object to be galvanized is connected to the cathode and through a nozzle is applied electrolytic coating powder or grainy substances, such as quartz or corundum, which exercise cleansing effect on the metal surface.

ASB 56A - METALLURGICAL LITERATURE CLASSIFICATION



Estimation of the thickness of electrodeposits. *I. V. Stepanov, I. P. Lyashchenko and M. S. Matveeva, Zashchita Lab. 5, 1180-01(1961).* In the spot method of determining the thickness of electrodeposits on metals, the spreading of reagent is avoided by applying it with a glass dropper by direct contact of the glass aperture with the metal surface. A better contact between the reagent and metal is possible because of the suction of gases, due to the reaction, into the dropper.

Chas. Blau

AMERICAN METALLURGICAL LITERATURE CLASSIFICATION

1961-1962

INDEXED BY

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PROCESSES AND PROPERTIES INDEX

9

Preparation of metals for coating. D. V. Stepanov and I. P. Lyashchenko. Russ. 50,491, Feb. 28, 1957. The surfaces of metals and alloys are prepl. for the electro-deposition of metals, or for coating with lacquers, enamels, etc., by treatment with an aq. soln. of  $Fe(NO_3)_3$  in the presence of EtOH or MeOH, followed by washing and drying.

ASME-SLA METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

CA

4

**Ni plating.** D. V. Stepanov and I. P. Lyashchenko. *Russ. 68,647, Aug. 31, 1960.* A bright nickel deposit is obtained by electrolyzing a soln. of NiCl<sub>2</sub> and H<sub>2</sub>BO<sub>3</sub> with

the addn. of the oxide, hydroxide or carbonate of nickel in a dil. aq. soln. of sulfonated naphthalene.

**Precious-metal coatings on Fe or on its alloys.** Robert Weiser (to Deutsche Gold- und Silber-Schneidmanufaktur, vorm. Barmser). *Ger. 738,660, July 23, 1943 (Cl. 48a, 14.08).* Prior to applying the precious metal, the Fe, particularly its stainless alloy, is cathodically treated in an acid, preferably HCl soln. contg. 0.5-0.01 g. of the coating metal or metals. The concn. of the acid is such that by itself it does not suffice to activate the base metal, but under the influence of the current the passivity is lifted. A suitable acid concn. is 2-3 N.

ASB 33 A METALLURGICAL LITERATURE CLASSIFICATION



Y  
X  
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CP

PROCESSING AND PROPERTIES INDEX

Chromium-plating of phonograph needles. D. V. Stepanov and I. P. Lyashchenko. *J. Applied Chem.* (U.S.S.R.) 13, 1829-32 (in French, 1940). Satisfactory results were obtained with: Bath temp., 57-60°; c.d., 50-60 amp./sq. in., 8-11 v.; spacing between needles, 25 mm.; for a plate of 20 microns, 30-35 min.; for 30 microns, 40-50 min.; anodes of Pb with 6% Sb with perforated surface. The compn. used in the oxidation of the Cr-plated needles is 150-250 g. l. NaOH and 80-120 NaNO<sub>2</sub> at 1.15-1.1V, 2-3 mm. V. A. Roshting

4

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSES AND PROPERTIES INDEX

B-I-6

BC

Deposition of hard bright nickel. D. V. Stepanov and I. P. Lisachchenko (*J. Appl. Chem. Russ.*, 1941, 14, 287-290).—Bright Ni is deposited at 16–26° from a solution of Ni sulphate (25–30 g. of Ni/l.), Ni naphthalene-di- and -tri-sulphonate (2–6 g. of Ni/l.), H<sub>2</sub>BO<sub>3</sub> (25–30 g.), and NaCl or KCl (10–15 g.). C.d. is: without stirring, 0.8–1.25 amp./dm.<sup>2</sup>, with stirring, 1.75–2.5 amp./dm.<sup>2</sup>. The  $\eta$  is 4–5.5; in the course of electrolysis it increases less rapidly if the solution contains also the product of reaction between sulphonated C<sub>10</sub>H<sub>8</sub> and NH<sub>3</sub>. Porosity and corrosion-resistance of Ni coatings 2–25  $\mu$ . thick are normal. The gloss is 66–86% of a Ag standard. J. J. B.

ASS-15A METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

COMMON VARIANTS INDEX

INDEX LETTERS

INDEX LETTERS

STEPANOV, Dmitriy Vasil'yevich; SUSHKEVICH, V.I., redaktor; VORONIN, K.P.,  
tekhnicheskiy redaktor.

[Impulse amplifiers] Impul'snye usiliteli. Moskva, Gos. energ. izd-  
vo, 1954. 255 p. (MLBA 8:1)  
(Amplifiers, Electron-tube)

KALABINA, A.V.; STEPANOV, D. Ye.; KRON, V.A.; CHERNOV, A.B.

Vinyl ethers in diene synthesis. Report No.2: Nitration and sulfonation of hexachlorophenoxybicycloheptene. Izv. SO AN SSSR no.7 Ser. khim. nauk no.2:106-110 '64 (MIRA 18:1)

1. Irkutskiy gosudarstvennyy universitet imeni A.A. Zhdanova i Irkutskiy institut organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

DOICHEV, K.; STEPANOV, E.

Boiling layer in an electric field. Godishnik khim tekhn  
8 no.2:207-216 '61 [publ. '62].

STEPANOV, E.A., kand. tekhn. nauk

Effect of the position of the working part of graders on  
the amount of cut and fill. Trudy VNIIGiM 42:113-122 '63.

(MIRA 17:6)

STEPANOV, E.A.

Hyperparathyroid osteodystrophy. *Khirurgiia* 34 no.10:50-54  
0 '58 (MIRA 11:11)

1. Iz kafedry detskoy khirurgii NI Morskovskogo meditsinskogo  
instituta imeni N.I. Pirogova (zav. - prof. S.L. Ternovskiy)  
na baze bal'nitsy imeni N.F. Filatova (glavnyy vrach M.N. Kalugina).  
(OSTEITIS FIBROSA, case reports  
Recklinghausen's dis. (Rus))

STEPANOV, E.A.

Bronchogenic cysts of the mediastinum in children. Grud.khir.  
no.3:74-80 '61. (MIRA 14:9)

1. Iz kliniki detskoy khirurgii II Moskovskogo meditsinskogo  
instituta imeni N.f. Pirogova (zav. - chlen-korrespondent AMN  
SSSR, zasluzhennyy deyatel' nauki prof. S.D. Ternovskiy [de-  
ceased]) na baze Detskoy bol'nitsy imeni N.F. Filatova (glavnyy  
vrach L.A. Vorokhobov).  
(MEDIASTINUM--DISEASES) (CYSTS)

STEPANOV, E.A.

Neuroblastomas of the mediastinum in neonates and nursing children. Vop. okh. mat. i det. 6 no.12:40-46 D '61. (MIRA 15:3)

1. Iz kliniki khirurgii detskogo vozrasta II Moskovskogo gorodskogo meditsinskogo instituta imeni N.I. Pirogova (ispolnyayushchiy obyazannosti zaveduyushchego kafedroy - dotsent A.Ye. Zvyagintsev) na baze detskoy bol'nitsy imeni N.F. Filatova (glavnyy vrach L.A. Vorkokhbov).

(MEDIASTINUM--CANCER)

(INFANTS--DISEASES)

KONDRASHIN, N.I., kand.med.nauk; STEPANOV, E.A.

Treatment of infants with congenital clubfoot. Vop. okh.  
mat. i det. 6 no.12:66-70 D '61. (MIRA 15:3)

1. I\* kliniki khirurgii i ortopedii detskogo vozrasta (dir. -  
chlen-korrespondent AMN SSSR zasluzhennyy deyatel' nauki RSFSR  
prof. S.D. Ternovskiy [deceased]) II Moskovskogo meditsinskogo  
instituta imeni N.I. Pirogova na baze ortopedo-nevrologicheskoy  
polikliniki pri Bol'shitse imeni N.F. Filatova (glavnyy vrach  
L.A. Vorokhobov).

(FOOT--ABNORMITIES AND DEFORMITIES)

(INFANTS--DISEASES)

MURASHOV, I. K. (Moskva, Strastnoy bul'var. d. 7, kv. 12);  
STEPANOV, E. A.

Immature neurogenic tumors of the mediastinum in children. Grad.  
khir. 4 no.3:74-80 My-Je '62. (MIRA 15:7)

1. Iz kliniki khirurgii detskogo vozrasta II Moskovskogo medi-  
tsinskogo instituta imeni N. I. Pirogova (zav. I. K. Murashov)  
na baze Detskoy bol'nitsy imeni N. F. Filatova (glavnyy vrach  
L. A. Vorokhobov)

(MEDIASTINUM--TUMORS)

STEPANOV, E. A.

Bronchoplasty in children. Khirurgia no. 118-120 Je '62.  
(MIRA 15:7)

1. Iz kliniki khirurgii detskogo vozrasta (zav. - prof. I. K. Murashov) II Moskovskogo meditsinskogo instituta imeni N. I. Pirogova na baze Detskoy bol'nitsy imeni N. F. Filatova  
(glavnyy vrach L. A. Vorokhobov)

(BRONCHI--SURGERY)

STEPANOV, E.A.; VODOLAZOV, Yu.A.

Congenital total pulmonary emphysema. Khirurgiia 39 no.4:31-37  
Ap'63 (MIRA 17:2)

1. Iz kliniki khirurgii detskogo vozrasta ( zav. - prof. I.K. Murashov) II Moskovskogo gorodskogo meditsinskogo instituta imeni Pirogova na baze Detskoy bol'nitsy imeni N.F.Filatova (glavnyy vrach L.A. Vorokhobov).

ARZENDT, A.A., prof.; ARTARYAN, A.A., kand. med. nauk; BAIROV, G.A., prof.;  
VOLKOV, M.V., prof.; VARSHAVSKAYA, D.Yu., kand. med. nauk;  
VOROKHOBOV, L.A.; GENERALOV, A.I., kand. med. nauk;  
DANIYEL'BEK, K.V., kand. med. nauk; DERZHAVIN, V.M., kand.  
med. nauk; DOLETSKIY, S.Ya., prof.; YERMOLIN, V.N.; ZATSEPIN,  
S.T., kand. med. nauk; ZVIAGINTSEV, A.Ye., dots.; ISAKOV, Yu.F.,  
doktor med. nauk; KOZYREV, V.A., kand. med. nauk; KONOVALOV,  
A.N.; KORNYANSKIY, G.P., prof.; KLIMANSKIY, V.A., kand. med.  
nauk; KLIMKOVICH, I.G., dots.; KONDRASHIN, N.I., kand. med.  
nauk; LEVINA, O.Ya., kand. med. nauk; LENYUSHKIN, A.I., kand.  
med. nauk; LEYBZON, N.D., doktor med. nauk; MALININA, L.I.,  
doktor med. nauk; MAREYEVA, T.G., kandidat meditsinskikh  
nauk; NERSESYANTS, S.I., kand. med. nauk; OVCHINNIKOV, A.A.;  
OGLEZNEV, K.Ya., kand. med. nauk; ROSTOTSKAYA, V.I., kand.  
med. nauk; STEPANOV, E.A., kand. med. nauk; EPSHTEYN, P.V.;  
OSTROVERKHOV, G.Ye., prof., glav. red.; DOMBROVSKAYA, Yu.F.,  
prof., otv. red.

[Multivolume manual on pediatrics] Mnogotomnoe rukovodstvo po  
pediatrii. Moskva, Meditsina. Vol.9. [Pediatric surgery] Kхи-  
rurgii detskogo vozrasta. Red. toma S.IA. Doletskii. 1964. 654 p.  
(MIRA 17:9)

1. Deystvitel'nyy chlen AMN SSSR (for Dombrovskaya). 2. Chlen-  
korrespondent AMN SSSR (for Bairov, Volkov).

L 4892-66 EWT(1)/EWA(j)/EWA(b)-2 RO

ACC NR: AP5024015

UR/0348/65/000/009/0033/0035  
631.551:633.51

AUTHOR: Stepanov, F. 44.55

38  
B

TITLE: Defoliants and desiccants for cotton plantations 161.44.55

SOURCE: Zashchita rasteniy ot vrediteley i bolezney, no. 9, 1965, 33-35

TOPIC TAGS: plant growth, defoliant agent, calcium compound, cyanamide, magnesium compound, chlorate, chloride

ABSTRACT: Cotton defoliation and desiccation represent necessary agricultural measures for speeding up the maturing and opening of the bolls which is needed for the efficient utilization of cotton picking machines. In 1964, the republics of Central Asia and the Chikmen Oblast of the Kazakh SSR defoliated more than 1,200,000 hectares, and this will be extended in the near future to all cotton plantations. The present article describes in detail the composition, preparation, storage, and use of calcium cyanamide, free cyanamide solution, magnesium chlorate, calcium chlorate-chloride, butifos (DEF), and foleks (mefos) (imported). The article concludes with recommendations concerning the best time for defoliation in the various cotton growing regions of the Soviet Union.

ASSOCIATION: IZR SoyuzNIKHI, Tashkent

SUBMITTED: 00

44.55

ENCL: 00

SUB CODE: GO, CB, 45

NO REF SOV: 000

OTHER: 000

Card 1/1 80

STEPANOV, F. A.

USSR/ Chemical Technology. Chemical Products and Their Application. Pesticides I-7

Abs Jour : Referat Zhur - Khimya, No 4, 1957, 12414

Author : Stepanov F.A., Zaynutdinov S.A.  
Inst : All-Union Scientific Research Institute of Cotton Growing  
Title : Development of Dusts with Locally Available Fillers for the Control of Pests of Cotton and Grasses

Orig Pub : Itogi rabot Vses. n.-i. in-ta klopkovodstva, 1954 (1956), No 4, 66-71

Abstract : Study of Kuvasay clays (KC) as fillers for DDT and hexachlorocyclohexane dusts has shown that grey KC is highly hygroscopic and unsuitable as a filler. Pink KC are satisfactory as concerns hygroscopicity; high Fe<sub>2</sub>O<sub>3</sub> content (6.25, 8.95 and 11.5%) has no detrimental effect on the stability of the dust. Efficacy of 5.5% DDT dust with KC against cotton owlet moth is the same as with talc. A 12% hexachlorocyclohexane dust with KC gave a

Card 1/2

- 39 -

5771649, 1 #  
USSR/Chemical Technology - Chemical Products and Their Applications -- Pesticides. I-7

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8844

Author : Stepanov, F.A.

Inst : All-Union Sciences Research Institute for Cotton Growing

Title : Development of complex Chemicals for the Control of Parasites of the Cotton Plant and of Grass Crops.

Orig Pub : Itogi rabot Vses. n.-i. in-ta khlopkovodstva, 1954 (1956) No 4, 71-72

Abstract : Mixtures of Pesticides Containing 8% DDT plus 3.3% metafos (I) (or vofatoks (II) plus 50% S plus 38.7% Kuvasay clay have given an aphid kill rate of 96.2% with I and 98.4% with II after a contact time of 24 hours.

Card 1/1

USSR / Cultivated Plants. Plants for Technical Use. M-5  
Sugar Plants.

Abs Jour: Ref Zhur-Biol., 1958, No 16, 73038.

Author : Vasil'yev, A. A.; Rakovskaya, M. V.; Stepanov, F.A.  
Inst : Not given.  
Title : Accelerating Boll Opening in the Cotton Plant by  
Chemical Means.

Orig Pub: Sots. s.kh. Uzbekistana, 1957, No 9, 23-24.

Abstract: Plant protection stations of the All-Union Scientific-Research Chemical Institute tested the effect of the following preparations from 1956: sodium arsenite (3%), sodium pentachlorophenolate (3%), a mineral oil emulsion of pentachlorophenol (3%), "endotal" (0.6%), sodium ethylxanthogenate (3%) and magnesium chlorate (1.5%). The harvested green boll were first treated by immersion in a solution

Card 1/2

92

STEPANOV, F.A.

Remaining quantity of phosphorus organic insecticides in cotton.  
Zashch.rast.ot vred. i bcl. 4 no.1:38-39 Ja-F '59.

(MIRA 12:2)

1. Zaveduyushchiy khimiko-toksikologicheskoy laboratoriyey  
Uzbekskogo nauchno-issledovatel'skogo instituta zashchity  
rasteniy.

(Phosphorus organic compounds)

(Cotton)

USPENSKIY, F.M., kand. biol. nauk; SOMOV, I.A.; MUMINOV, A.M.,  
kand. sel'khoz. nauk; IVANOV, Ye.N., kand. biol. nauk;  
VASIL'YEV, A.A., kand. sel'khoz. nauk; SOLOV'YEVA, A.I.,  
kand. sel'khoz. nauk; ZAPROMETOV, N.G., doktor sel'khoz.  
nauk; YAKHONTOV, V.V., doktor biol. nauk; KAPUSTINA, R.I.;  
STROMM, N.G.; POLEVSHCHIKOVA, V.N., kand. sel'khoz. nauk;  
KARIMOV, M.A., doktor biol. nauk; NOSKOV, I.G., kand. sel'-  
khoz. nauk; KHODZHAYEV, A.Kh.; ALEYEV, B.G., kand. sel'khoz.  
nauk; YAKHONTOV, V.V., doktor biol. nauk; ~~STEPANOV, E.A.~~;  
LYUBETSKIY, Kh.Z., kand. med. nauk; GUREVICH, B.E.;  
KONDRAT'YEV, V.I.; SUDARS, L.P.; KOSTENKO, I.R., zasl. agr.  
Uzbekskoy SSR; GORELIK, I.M., red.; BAKHTIYAROV, A., tekhn.  
red.

[Manual on controlling the pests, diseases and weeds of cot-  
ton, corn, and legumes] Spravochnik po bor'be s vrediteliami  
i bolezniami khlopchatnika, kukuruzy i bobovykh kul'tur. Izd.2.,  
perer. i dop. Tashkent, Gos.izd-vo UzSSE, 1963. 325 p.

(MIRA 16:5)

(Field crops--Diseases and pests)  
(Weed control)

STELANOV, F. F. AND I. F. KREMPOLO'SKII.

Ukhod za kotlom pri mestnom toplive. Moskva, Transzheldorizdat, 1943. 53  
p. illus.

Maintenance of a locomotive boiler fired with local fuel.

DIC: TJ642.K7

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of  
Congress, 1953.

STEFANOV, F. F. and E. E. ~~TE~~BENIKHIN.

Ukhod za kotlom zimoi. Moskva, Transzhelizdat, 1944. 35 p.

(Maintenance of a locomotive boiler in winter.)

DLC: TJ642.S8

SO: Manufacturing and Mechanical Engineering in the Soviet Union,  
Library of Congress, 1953

STEPANOV, F.I.

Intensification of the production and raising of chicks. Veterinaria  
41 no.9:9-10 S '64. (MIRA 18:4)

1. Direktor Popisnyanskoy inkubatorno-ptitsevodcheskoy stantsii,  
Luganskaya oblast'.

STEPANOV, F.I.; LUKASHINA, L.I.

Mixed polymethine dyes of the indolizine series. Zhur.ob.khim. 33  
no.7:2364-2368 J1 '63. (MIRA 16:8)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov  
i krasiteley.

(Indolizine) (Dyes and dyeing)

17(6)

SOV/177-58-7-18/28

**AUTHORS:** Treskunov, B.G., Lieutenant-Colonel of the Medical Corps, Stepanov, F.K., Major of the Medical Corps

**TITLE:** A Case Containing Fixings for Taking Test Samples for Laboratory Investigations

**PERIODICAL:** Voyenno-meditsinskiy zhurnal, 1958, Nr 7, pp 75-76 (USSR)

**ABSTRACT:** The author demonstrates a tin case containing tubes and instruments for taking test samples of soil, water, air, food, insects etc. for laboratory investigations. There are 2 photographs.

Card 1/1

Tret'yakov, N. S., Ul'yanova, N. V. and Stepanov, F. N.--"Unusual form of poliomyelitis in adults in evacuated areas" (Report on the 6th scientific conference of Saratov Medical Institute, 29 May 1943 and 1st scientific conference of the Institute of Medical Sciences of USSR), Trudy (Sarat. gos. med. in-t), Vol. VII, 1948, p. 189-97

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

STEPANOV, F. N.

Stepanov, F. N. "Dynamics of neural disturbances after the year of the Great Fatherland War from material of the clinic of neural disorders of the Saratov Medical Institute," Trudy (Sarat. gos. med. in-t), Vol. VII, 1948, p. 237-44

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Stateli, No. 3, 1949)

STEPANOV, F.N. (Saratov); KONYAKHINA, V.N. (Saratov); YAKUNIN, Yu.A.,  
Kandidat meditsinskikh nauk (Moskva)

Clinical aspects of nervous disturbances in poliomyelitis. Vop.  
okh.mat. i det. 1 no.1:14-20 Ja-F '56. (MLRA 9:9)  
(POLIOMYELITIS) (NERVOUS SYSTEM--DISEASES)

STEPANOV, F.N.; ALDANOVA, N.A.; YURCHENKO, A.G.; DOVGAN', N.L.

Azulene. Metod.poluch.khim.reak.i prepar. no.4/5:86-92 '62.  
(MIRA 17:4)

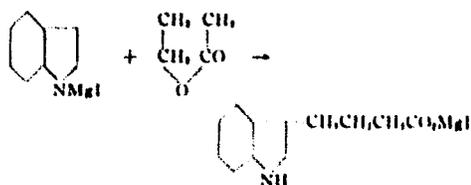
1. Kiyevskiy imeni Lenina politekhnicheskoy institut.



ca

10

3-Indolebutyric acid. F. N. Stepanov, U.S.S.R.  
66,681, July 31, 1946. 1-Indolylmagnesium iodide is  
made to react with  $\gamma$ -butyrolactone at 120-30° according  
to the scheme



After 4-5 hr. heating there is obtained a cryst. ppt. sol. in  
 $H_2O$ , an aq. soln. of which is acidified with a mineral acid  
to set free 3-indolebutyric acid. M. Hosen

ATL 554 METALLURGICAL LITERATURE CLASSIFICATION

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LITERATURE CLASSIFICATION										LITERATURE CLASSIFICATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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USSR/Chemistry - Laboratory Equipment      Sep 50  
 Continuous-Action Counterflow Extraction Apparatus  
 for Laboratory Use," F. N. Stepanov, M. S. Vul'fson,  
 I. A. Mikova, Sci Res Inst of Org Intermediate  
 Products and Dyesuffs

"Zavod Lab" Vol XVI, No 9, pp 1131

New apparatus for extraction from solutions was constructed and tested in operation. Extraction occurs in narrow vertical tube in which solution and solvent, flowing toward each other, are stirred vigorously by spiral ribbon mixer. Apparatus is designed for operation with types of solvent

169T28

USSR/Chemistry - Laboratory Equipment      Sep 50  
 (Contd)

heavier or lighter than solution. Main advantage of extractor is its efficiency, and small amount of solvent used.

169T28

STEPANOV, F. N.

Stepanov, F. N.

6

✓ Preparation of 4-nitrosalicylic acid. F. N. Stepanov, N. S. Vul'fon, and I. A. Nikova (K. E. Voroshilov Sci. Research Inst. Org. Intermed. and Dyes, Moscow). *Zhur. Priklad. Khim.* 27, 1332-3 (1954).—To 129 ml. 23.5% NaOH, 500 ml. H<sub>2</sub>O, and 130 g. ice was added in 1 hr. 50 g. 4-nitrophthalimide, stirred 1 hr. at 5-8°, treated over 20 min. with 120 ml. NaOCl soln. (14% active Cl), stirred 1 hr., heated to 60°, allowed to cool slowly over 18 hrs., filtered and acidified, yielding 86% mixed nitroanthranilic acids, m. 237-42°. This (50.5 g.) added at 97° to 300 ml. 50% H<sub>2</sub>SO<sub>4</sub>, cooled to 3°, diazotized with 57 ml. 40% NaNO<sub>2</sub>, stirred 0.5 hr. and added to 350 ml. H<sub>2</sub>O and 470 g. CuSO<sub>4</sub>, kept at 105-8°, stirred 1 hr., filtered hot and washed with H<sub>2</sub>O, gave 87.1% mixed nitrosalicylic acids, m. 188-204°. This (35 g.) in warm soln. of 16 g. NaHCO<sub>3</sub> in 800 ml. H<sub>2</sub>O, was filtered, heated to 90-5°, acidified with 18 ml. 18% HCl and cooled, yielding 18 g. crude product, which crystd. from 300 ml. 30% EtOH gave 16 g. pure 4-nitrosalicylic acid, m. 229-30°. G. M. Kosolapoff

(2)

gms

Stepanov, F. N.

✓ 4-Oxothiazolines (4-hydroxythiazoles). I. Synthesis of 2-phenyl-2-thiazolin-4-one and its derivatives substituted in the benzene ring. F. N. Stepanov and Z. Z. Moiseeva (K. P. Vorobyl'ov Sci. Research Inst. Org. Intermed. and Dyes, Moscow). *Zhur. Obshchei Khim.* 25, 1170-4 (1955). — The substance described as 2-phenyl-2-thiazolin-4-one (I) by Chabrier, et al. (cf. C.A. 42, 5153f; 44, 5347g), m. 250°, is in reality 2-phenyl-5-(2-phenyl-1-thiazolinyldene)-1-thiazolinone (II), i.e. the product of its self-condensation. 2-Phenyl-2-thiazolin-4-one is a very weak acid and shows phenolic properties so that it can be acetylated. Refluxing 3 g.

there formed 1.8 g.  $PhC(=CH_2)SCH_2CO_2H$  (III), decomp. 125°, which refluxed in MePh 3 hrs., filtered, and allowed to stand 2 days gave 54% I. Keeping 5 g.  $p-O_2N-C_6H_4CN$  in 60 ml. dioxane with 10 g.  $HSCN_2CO_2H$ , satd. with dry HCl at 0°, 3 days gave 70%  $p-O_2N$  deriv. of III, m. 140°, which refluxed in  $C_6H_6$  3 hrs. gave 52%  $p-O_2N$  deriv. of I, m. 177-8°. The following were prepd. similarly (substituent on Ph ring, % yield and m.p. of the deriv. of III, and % yield and m.p. of the deriv. of I given):  $m-O_2N$ , 80, decomp. 154°, 60, 179-80°;  $p-MeO$ , 23, 162-3°, 73, 143°;  $p-Cl$ , 81, 175-6°, 78, 181-2°. Refluxing I with  $Ac_2O$

*Ch* 4-Hydroxythiazoles. II. Reactions of the methylene group of 2-phenyl-2-thiazolin-4-one. F. N. Stepanov and Z. Z. Moiseeva. *J. Gen. Chem. U.S.S.R.* 25, 1923-6 (1955)(Engl. translation.)—See *C.A.* 50, 8604e. 2  
B. M. R.

10° (from BuOH), and the less sol. S.CPh.N.CO.C:CH-  
C:C(OH).N:CPh.S (IIa), m. 261-5° (from AcOH). Re-  
fluxing *p*-nitro-I with diphenylformamide in pyridine as  
above similarly gave 8.5% red-orange *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub> analog

MS  
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(III) of II, m. 309-10°, and 40% *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub> analog of IIa;  
m. 272-3°. II heated with Ac<sub>2</sub>O gave 87% yellow *N*-Ac  
deriv., m. 201-2°; similarly was prepd. *N*-Ac-II, orange, m.  
277-8°. Heating Ac-II with 2-methylbenzothiazole ethio-  
dide in iso-PrOH in the presence of Et<sub>3</sub>N 6 hrs. gave 80%  
(2-phenyl-4-oxo-4,5-dihydro-5-thiazole)(3-ethyl-5-benzothia-  
zole)dimethine, green, decomp. 253°, absorption max. 668 mμ.  
Refluxing *p*-nitro-I with 2-β-acetanilidovinylpyridine ethio-  
dide in Et<sub>3</sub>N-EtOH 2 hrs. gave 55% blue (2-*p*-nitrophenyl-4-  
oxo-4,5-dihydro-5-thiazole)(1-ethyl-1,2-dihydro-2-pyridine di-

STEPANOV V.F.N.

5

~~Butyrolactone and its derivatives. I. Oxide condensa-~~  
~~tions—Synthesis of derivatives of butyrolactone. F. N.~~

~~Stepanov (K. E. Voroshilov Sci. Research Inst. Org. In-~~  
~~termediates and Dyes, Moscow). Zhur. Obshchei Khim. 25,~~

~~2480-8 (1955).—To 3.3 g. Na in 50 ml. dry EtOH was added~~  
~~at -3° 20 g. AcCHMeCO<sub>2</sub>Et and 7 g. ethylene oxide; after~~  
~~4 hrs. at 30-40° (cooling) the mixt. was kept 12 hrs. and~~  
~~distd., yielding 49.3% EtOAc; the residue, treated with~~

~~ice-H<sub>2</sub>SO<sub>4</sub>, and extd. with Et<sub>2</sub>O, gave 50% MeCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>-~~

~~O.CO, b. 201-2°, n<sub>D</sub><sup>20</sup> 1.4311, d<sub>4</sub> 1.0500; a 70% yield was~~  
~~obtained on heating 8 hrs. at 110° the above ester with~~  
~~ethylene oxide and dry KOAc. Similar reaction with epi-~~

~~chlorohydrin gave a low yield of either HOCH<sub>2</sub>CH<sub>2</sub>O.CO.CH-~~

~~Me.CH<sub>2</sub> or CH<sub>2</sub>CH(OH).CH<sub>2</sub>O.CO.CHMe, b<sub>p</sub> 163-7°,~~  
~~n<sub>D</sub><sup>20</sup> 1.4548, d<sub>4</sub> 1.1209; 3,5-dinitrobenzoate, m. 112°. Reaction~~  
~~of 15.6 g. 2-carbethoxycyclopentanone with 5 g. ethylene~~  
~~oxide in dry EtOH contg. 2.3 g. Na at 20-5° 14.5 hrs. gave 7~~

1/2

(over)

*Butyrolactone and its derivatives*

g.  $EtO_2C(CH_2)_2CH_2CH_2O.CO$ , b<sub>7</sub> 163-72°, b<sub>3</sub> 164-6°, n<sub>D</sub><sup>20</sup> 1.4562, d<sub>4</sub><sup>20</sup> 1.1025; the same formed in 37% yield on heating the  $CH_3O$  ester and the oxide with KOAc 4 hrs. at 120°; boiling the lactone with 5% H<sub>2</sub>SO<sub>4</sub> gave the corresponding *carboxylactone* (I), m., 82-3°. Similarly, 2-carbethoxy-cyclohexanone gave a low yield of the corresponding *carbethoxylactone*, b<sub>0.3</sub> 120-35°, which was directly hydrolyzed to  $HO_2C(CH_2)_4CH_2CH_2O.CO$  (II), m. 84-5°. I with SOCl<sub>2</sub> gave the *acyl chloride*, b<sub>0.3</sub> 140-1°, n<sub>D</sub><sup>20</sup> 1.4802; *diphenylamide*, m. 142-3°; *Ag salt*, plates from H<sub>2</sub>O; *Me ester*, b<sub>0.3</sub> 135-6° n<sub>D</sub><sup>20</sup> 1.4583, d<sub>4</sub><sup>20</sup> 1.1390. II *Me ester*, from II and CH<sub>3</sub>N<sub>2</sub>, b<sub>0.3</sub> 145-6°, n<sub>D</sub><sup>20</sup> 1.4590, d<sub>4</sub><sup>20</sup> 1.1114.

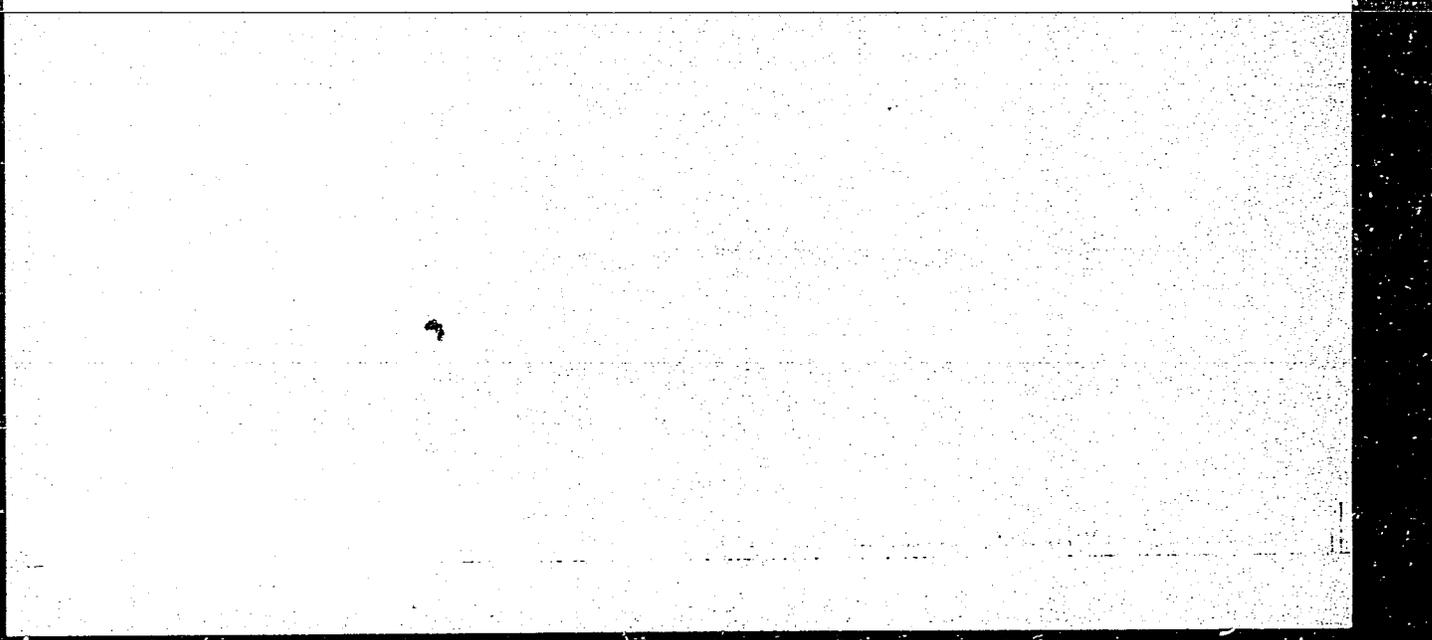
G. M. Kosolapoff

$\frac{2}{2}$

PM ~~9/25/54~~

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Stepanov, F.M.

PHASE I BOOK EXPLOITATION SOV/A350

Sovesheniye po khimii, tekhnologii i primeniyu polivodnykh piridina i khinolina. Riga, 1957  
Khatya, tekhnologiya i primeneniye polivodnykh piridina i khinolina; materialy soveshaniya (Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives; Materials of the Conference) Riga, Izd-vo AN Latvyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk Latvyskoy SSR. Institut khimii, Vsesoyuznoye khimicheskoye obshchestvo.

Ed.: S. Bazhenova; Tech. Ed.: A. Klyavina; Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry, E. V. Yanaga, Candidate of Chemistry (Resp. Ed.), L. P. Zalukayev, Doctor of Chemistry, and M. M. Kalyn.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline and their derivatives from natural sources. No personalities are mentioned. Figures, tables, and references accompany the articles.

III. SYNTHESIS BASED ON PYRIDINE AND QUINOLINE

SIL'NENKOVA, M. V., and S. A. GIL'VE. (Institute for Organic Synthesis of the Academy of Sciences Latvyskaya SSR). Vapor Phase Contact Oxidation of Picolines

185

VORON, A. P., N. V. KOLASH, N. P. TURLAYNA, and L. V. INALTE. (Institute for Organic Chemistry and Institute for Medicinal Chemistry, Scientific Research Institute of the Ministry of Health Industry, All-Union Association of Alkyl Pyridines (Phenox) Group in Germany) Sales and in salts of  $\gamma$ -alkoxy (Phenox) Pyridines.

Stepanov, F. M., and N. A. Alimov. (Kafedra organicheskoy khimii Moskoyevskogo inzhenerno-stroitel'nogo universiteta; Vsesoyuznyy nauchno-issledovatel'skiy institut poluproduktov i khranitel'nykh sredstv SSSR (Department of Organic Chemistry of the Moscow Institute for the Study of Organic Chemistry, Scientific Research Institute for Storage Industry, All-Union Association of Alkyl Pyridines with Keto Halides

203

Vaserman, M. M., and S. A. Gil'VE. (Rushtsiy meditsitsinskoy laboratorii, Institut organicheskoy khimii Akademiya Nauk Latvyskoy SSR (Riga Medical Institute of Organic Chemistry), The Use of Saturated Nitrogen-Containing Heterocyclic Compounds for Synthesis of Gangliosides and Curatrim Substances

207

Zalukayev, L. P., and E. V. Yanag. (Institut khimii Akademiya Nauk Latvyskoy SSR (Riga Institute of the Academy of Sciences Latvyskaya SSR). Synthesis and Reactions of  $\alpha$ -Methoxyquinolines

223

Степанов, Ф.Н.

STEPANOV, F.N.; IODKO, M.O.; VUL'FSON, N.S.

Investigation of Dieckmann's reaction. Part 2: Mechanism of the cyclization reaction of diethyl ether of o-phenyleacetic- $\beta$ -propionic acid. Ukr.khim.zhur. 23 no.4:489-492 '57. (MIRA 10:10)  
(Chemical reaction--Mechanism)  
(Propionic acid)

F. N. Stepanov

Distr: 4E1j

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7  
(Butyrolactone and its derivatives. II. Some reactions of acyl derivatives of butyrolactone. F. N. Stepanov and O. K. Smirnov (Sci.-Research Inst. Org. Intermediates and Dye, Moscow). *Zhur. Obshchei Khim.* 27, 1042-4 (1957); *cl. C.A.* 51, 7344a.—To 2.3 g. Na suspended in  $C_4H_8$  was

added at once 12.8 g.  $AcCH_2CH_2CH_2O.CO$  and 10 drops MeOH and the mixt. shaken 4 hrs., warmed until all Na had dissolved, treated with 17 g. MeI, and refluxed 3 hrs. yield-

ing after aq. treatment 75%  $AcMeC.CH_2CH_2O.CO$ ,  $b_p$  125-6°,  $d_4^{20}$  1.1404,  $n_D^{20}$  1.4561; semicarbazone, m. 190°. The oxo lactone refluxed 0.5 hr. with 5% HCl, cooled, and satd. with  $K_2CO_3$  gave 98%  $AcCHMeCH_2CH_2OH$ ,  $b_p$  80°  $d_4^{20}$  0.9811,  $n_D^{20}$  1.4062.

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L.H. S42 10/10/51

88% BuEtCHCO,Me. Treatment of 70 g. acetobutyrolactone with 93 g.  $p-O_2NC_6H_4COCl$  in aq. Me<sub>2</sub>CO with addn. of 20 g. NaOH at 10-15° at pH 8-9 followed by sepn. of the ppt., washing it with MeOH, and adding 100 ml. 15% NH<sub>4</sub>OH and stirring 12 hrs. gave an orange ppt. which was washed with MeOH and stirred with 1 l. H<sub>2</sub>O at 0° and treated with 100 ml. 25% NaOH yielding a residue of 36 g.  $p-O_2NC_6H_4CONH_2$ , while the filtrate on acidification

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gave 12% yellow  $p-O_2NC_6H_4COCH_2CH_2CH_2O.CO$ , m. 110-20°. The Na deriv. from 25.6 g. acetobutyrolactone and 4.6 g. Na in C<sub>6</sub>H<sub>6</sub> was treated with 36 g. BrCH<sub>2</sub>-  
... treated with H<sub>2</sub>O. the send.

*dm*

79-28-4-9/60

AUTHORS: Stepanov, F. N., Davydova, S. L.

TITLE: Heterocyclic Methyl-Ketone Derivatives (Geterotsiklicheskiye proizvodnyye metilketonov)

PERIODICAL: Zhurnal Obschey Khimii, 1958, Vol. 28, Nr 4, pp. 891-896 (USSR)

ABSTRACT: In 1898 W. Wislicenus (Ref 1) carried out the condensation of oxalate with quinaldine and obtained the ether of the substituted pyrrolic acid. Later on this reaction was investigated more detailed by Borsche and his collaborators (Ref 2). They extended it also to other heterocycles (Ref 3). In such a condensation the diethyl oxalate is one of the most active acylating ethers. The authors found it interesting to get to know condensations with less active compounds, e.g. with ethyl benzoate and other ethers. Under the action of potassium ethylate the ethyl benzoate enters reaction with 2 methyl homologues of different heterocycles and forms ketones according to the scheme

APPROVED FOR RELEASE: 08/25/2000 <sup>C<sub>2</sub>H<sub>5</sub>OK</sup>  <sup>2,5</sup>  CIA-RDP86-00513R001653130013-8"

Card 1/3

## Heterocyclic Methyl-Ketone Derivatives

79-28-4-9/60

- (I) X = S, R = C<sub>6</sub>H<sub>5</sub>; (II) X = O, R = C<sub>6</sub>H<sub>5</sub>; (III) X = Se, R = C<sub>6</sub>H<sub>5</sub>;  
 (IV) X = CH=CH, R = C<sub>6</sub>H<sub>5</sub>; (V) X = NCH<sub>3</sub>, R = C<sub>6</sub>H<sub>5</sub>; (VI) X = S,  
 R = CH<sub>3</sub>; (VII) X = S, R = n-C<sub>2</sub>H<sub>5</sub>OC<sub>6</sub>H<sub>4</sub>; (VIII) X = S, R = n-ClC<sub>6</sub>H<sub>4</sub>;  
 (IX) X = S, R = n-C<sub>2</sub>H<sub>5</sub>OCOC<sub>6</sub>H<sub>4</sub>

2-methyl benzimidazole which under given conditions does not react at all, forms an exception. The yield of ketones fluctuates between 5 and 28 %. One of the ketones obtained by the authors *o*-benzoyl-2-methyl-benzthiazole (I) was described already earlier by Rogers and Sexton (Ref 5) who had obtained it by another method. (In the mentioned paper the boiling point was erroneously fixed at 150° instead of the correct boiling point at 110 - 111°). The para-substituted ethyl benzoates behaved much more active in the reaction with 2-methyl-benzothiazole. The same heterocyclic ketones with the exception of (IV) may be obtained also by another method, by means of the condensation of *o*-substituted anilines with acyl or aryl acetate according to the scheme

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79-28-4-9/60

## Heterocyclic Methyl-Ketone Derivatives

(XI) X = NH, R = C<sub>6</sub>H<sub>5</sub>

The synthesized heterocyclic ketones have an active methylene group between the heterocycle and the carbonyl. There are 1 table and 7 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley imeni K. Ye. Voroshilova)  
(Scientific Research Institute for Organic Semi-Products and Dyes imeni K. Ye. Voroshilov)

SUBMITTED: March 27, 1957

Card 3/3

STEPANOV, F. N.; VUL'FSON, N. S.

Investigation in the series of derivatives of acetonitrile. Report  
No.1. Hydrolytic splitting of arcylycyanoacetic esters. Org.  
poluprod. i kras. no.1:222-230 '59. (MIRA 14:11)  
(Acetonitrile)  
(Cyanoacetic acid)

S/081/60/000/021/013/018  
A005/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 21, p. 168, # 84726

AUTHORS: Stepanov, F. N., Iodko, M. O.

TITLE: The Synthesis of the o-Phenylene Acetic- $\beta$ -Propionic Acid

PERIODICAL: V sb.: Organ. Poluprodukty i krasiteli. No. I. Moscow, Goskhimizdat, 1959, pp. 237-239

TEXT: It turned out that water is needed for the hydrolysis of the intermediately forming 1,2,3,4-tetrahydro-3-oxo naphthoic-2 acid at the deoxidation of 2-HOC<sub>10</sub>H<sub>6</sub>CO-OH-3 under the action of Na in iso-C<sub>5</sub>H<sub>11</sub>OH to o-phenylene acetic- $\beta$ -propionic acid. The optimum ratio of water: 2-HOC<sub>10</sub>H<sub>6</sub>CO-OH-3 is (in moles) equal to 1.5 : 1. One smelts 60 g Na under a layer of 125 ml iso-C<sub>5</sub>H<sub>11</sub>OH, and at boiling for 1 hour one adds the solution of 34 g 2-HOC<sub>10</sub>H<sub>6</sub>CO-OH-3 in 500 ml iso-C<sub>5</sub>H<sub>11</sub>OH containing the rated quantity of water. One boils until total dissolution of Na (about 6 hours), cools down to 140-150°C, pours out into 300 ml of cold water, washes the spirit layer with water, acidifies the jointed aqueous solutions to weak acidic reaction, distills off the remainder of iso-C<sub>5</sub>H<sub>11</sub>OH, and filters off

Card 1/2

AUTHORS: Stepanov, F. N., Aldanova, N. A. SOV/79-29-1-73/74  
TITLE: New Azulene Derivatives (Novyye proizvodnyye azulena)  
PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 339-340 (USSR)

ABSTRACT: Recently several research workers (Ref 1) described colored azulene derivatives where the azulene nucleus forms part of the chromophoric system. In this connection the tropylium cycle of azulene plays in these compounds the part of a nucleophilic-electrophilic group (of an auxochrome), whereas as another auxochrome is either an oxygen or nitrogen atom. The authors synthesized the salts (I) which with respect to their properties are typical basic dyes. The colored cation of the compound does not contain any hetero atoms and the seven-membered cycles play the part of both auxochromes. This is apparently the first representative of the salt-like dyes the colored cation of which is a hydrocarbon radical (I). The perchlorate and chloride of the dye (I) (where  $X^- = ClO_4^-$  and  $Cl^-$  correspond) are obtained quantitatively as a blackish powder at short heating of the azulene solution in ortho-formic acid ester with the corresponding acid. Apart from this the chloride

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New Azulene Derivatives

SOV/79-29-1-73/74

was obtained by condensation of azulene-2-aldehyde with azulene in the presence of excessive hydrochloric acid which clearly confirms structure (I). Perchlorate is insoluble in water and ether, difficultly soluble in chloroform and in the lower alcohols, whereas the chloride is better soluble in the solvents mentioned. The fast-dyed solutions of the dye are decolorized by alkali lyes. From the alkali solution a light-yellow product is extracted by ether which in the case of acidification leads to the initial dye. There are 2 references.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley (Scientific Research Institute for Organic Intermediate Products and Dyes)

SUBMITTED: July 28, 1958

Card 2/2

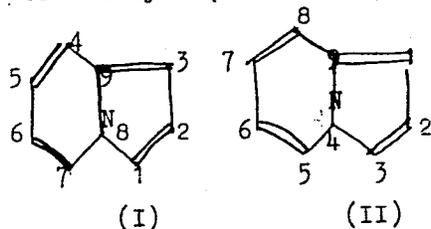
AUTHORS: Stepanov, F. N., Lukashina, L. I.

SOV/79-29-8-77/81

TITLE: Monomethine Dyes of the Indolicine Series

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8,  
pp 2792 - 2795 (USSR)

ABSTRACT: In spite of the high reactivity of indolicine (I) and its developed system of conjugated bonds in the molecule only few dyes of its derivatives have hitherto been described. The patents also contain (Ref 1) few founded data on the structure of the dyes (Refs 2,4,5)



(Formula (II) is known in the USA by the name of "pyrrocoline")

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It was the object of the present paper to show that the synthesis of two series of indolicine dyes with an exterior chain

Monocethine Dyes of the Indolicine Series

SOV/79-29-8-77/81

in positions 1 and 3 is possible, and further to compare their spectra. In order to fix a certain position of the exterior chain, the authors started from the doubly substituted indolicines exhibiting a free position in the pentacyclic ring. The condensation of the 1,2-dimethylindociline with orthoformic ester in an acetic acid medium in the presence of potassium bromide leads to a dyestuff to which beyond doubt the structure (IIIa) can be ascribed. The less soluble and more easily crystallized perchlorate of this dye (IIIb) is obtained when the perchlorate of 1,2-indolicine is heated with orthoformic ester in pyridine. An analogous condensation of 2,3-dimethylindolicine in the presence of potassium iodide results in the synthesis of dyestuff (IVa). The condensation of perchlorate of 2,3-dimethylindolicine with diphenylformamide in the acetic acid anhydride results in the derivative (VI). When this compound is heated with 1,2-dimethylindolicine in butanol, dyestuff (V) is formed. By condensation of 1,2-dimethylindociline with diphenylformamide derivative (VII) results. The absorption curves of the three dyes obtained are to be seen in the figure. Their examination shows that dyestuff (III)

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Monomethine Dyes of the Indolicine Series

SOV/79-29-8-77/81

may be considered to be a piperidine derivative, and dyestuff (IV) without any doubt may be regarded as a pyrrole derivative. There are 1 figure and 6 references, 2 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley ( Scientific Research Institute of Organic Semi-finished Products and Dyes)

SUBMITTED: May 24, 1958

Card 3/3

STEPANOV, F.N.

Concerning the synthesis of 2,3,6-trimethyl-2,7-octadien-6-ol,  
3-methylinalool. Zhur.ob.khim. 30 no.7:2437 J1 '60.  
(MIRA 13:7)

(Octadienol) (Iinalool)

STEPANOV, F.N.; LUKASHINA, L.I.

Polymethine dyes of the indolizine series. Zhur. ob. khim. 30  
no.9:2850-2853 S '60. (MIRA 13:9)

1. Institut poluproduktov i krasitel'ov, Moskva.  
(Pyrrocoline) (Dyes and dyeing)

STEPANOV, F.N.; GRINEVA, N.I.

Acylation of indolizines. Part 1: Acylation of indolizine and  
2-methylindolizine with  $\beta$ -keto ethers. Zhur.ob.khim. 32  
no.5:1529-1531 My '62. (MIRA 15:5)

1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov  
i krasiteley.

(Indolizine)

(Ethers)

STEPANOV, F.N.; GRINEVA, N.I.

Acylation of indolizines. Part 2: Acylation of carboxyindolizines.  
Zhur.ob.khim. 32 no.5:1532-1535 My '62. (MIRA 15:5)

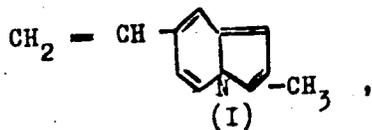
1. Nauchno-issledovatel'skiy institut organicheskikh poluproduktov  
i krasiteley.

(Indolizine)

(Acylation)

S/079/62/032/008/005/006  
D204/D307

AUTHORS: Stepanov, F. N. and Turchinovich, G. Yu.  
TITLE: The synthesis of 2-methyl-6-vinylindoline  
PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 8, 1962,  
2659 - 2661  
TEXT: The new compound



(A), was synthesized in the search for compounds of higher molecular weight, containing a heterocyclic group. 2-Methyl-6 vinylpyridine (11.9 g) was condensed with bromoacetone (13.7 g) over

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